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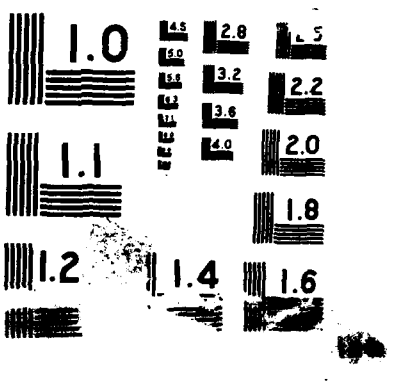
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TECHNICAL MEMORANDUM TM-88-F-4

AD

AD-A194 513

THE LOTUS MULTIYEAR FUNDING MODEL

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APRIL 1988

U.S ARMY
AVIATION
SYSTEMS COMMAND

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THE LOTUS MULTIYEAR FUNDING MODEL

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UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER USAAVSCOM TM-88-F-4	2. GOVT ACCESSION NO. A194593	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* The /LOTUS Multiyear Funding Model		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER USAAVSCOM TM-88-F-4
7. AUTHOR(s) Chic Lurch, Harold Tessereau, Doug Peters		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Aviation Systems Command, Directorate for Systems and Cost Analysis, Operational Cost Analysis Division, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Aviation Systems Command, Directorate for systems and Cost Analysis, 4300 Goodfellow Boulevard (AMSAV-B), St. Louis, MO 63120-1798		12. REPORT DATE April 1988
		13. NUMBER OF PAGES 40
14 MONITORING AGENCY NAME & ADDRESS *(if different from Controlling Office)*		15. SECURITY CLASS. *(of this report)* UNCLASSIFIED
		15a. DECLASSIFICATION DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution is unlimited

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18 SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Total Obligation Authority, Multiyear Plan, Annual Plan, Contract Funding Plan, Program Funding Plan, Present Value, Inflation, Advanced Funding, Total Weapon System, Budget Request, End Item, Net Request, Advance Funding, SASC, HASC, HAC, SAC.

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The Lotus Multiyear Funding Model presented in this report was developed to generate Multiyear Funding Exhibits as per DoD Budget Guidance Manual, DoD 7110-1-M, Revision No. 2 to July 1985 Reprint, dated 24 July 1987. All of the exhibits generated by the model address the cost impact upon a PMO Program Plan of awarding a "Multiyear" contract for a subsystem procurement instead of an "Annual" award for the same item. The model requires the user to input data for a six year period covering the budget year and five POM years.

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20. ABSTRACT (Cont'd):

The data includes "Multiyear" and "Annual" contractual funding requirements for the subsystem under analysis, "Multiyear" funding requirements for the entire PMO procurement program, as well as the latest OSD inflation and outlay rate guidance. With this input the model outputs the yearly budgetary requirement for the subject system by fiscal year. It also calculates the annual savings gained through the use of a "multiyear" procurement strategy. The model then generates an exhibit which can be used to split-out savings attributable to inflation avoidance from those which are attributable to real constant fiscal year dollar savings.

ACKNOWLEDGMENTS

We wish to express our appreciation to Messrs. Bill Crosby and Bob Greiner, formerly of the Systems and Cost Analysis Directorate, who were responsible for creating the Lotus Multiyear Funding Model. Additionally, Mr. Mark Malone, Deputy Director of Systems and Cost Analysis, Mr. Steve Martinez of the Combat Aviation PEO, and Mr. Earl Krueger of the UH-60 PMO were all consulted during the development of this study and provided constructive comments from their prior experience with multiyear programs.

TABLE OF CONTENTS

I. INTRODUCTION.

A. PURPOSE. This report provides documentation for the Lotus Multiyear Funding Model. It contains a general discussion of the Multiyear Funding concept, the Congressionally prescribed Multiyear Exhibits and the model's methodology. Included in the appendices are a Lotus Multiyear Funding Model User's Guide and a Glossary of Acronyms.

B. BACKGROUND. Since the approval by Congress of multiyear funding for the acquisition of selected hardware systems, the Multiyear Exhibits had to be manually calculated, a laborious and time consuming process. Consequently, a need existed for the development of an automated spreadsheet model that could generate all of the prescribed Multiyear Exhibits.

C. SCOPE. The Lotus Multiyear Funding Model was developed to assist the Program/Project/Product Managers in presenting their programs to Congress in the prescribed formats in a timely and efficient manner.

D. OBJECTIVE. The objective of this report is to provide the Lotus Multiyear Funding Model user with the documentation necessary to thoroughly understand and fully utilize its capability.

II. PHILOSOPHY OF MULTIYEAR CONTRACTING.

The impetus for proposing multiyear contracts is based upon the principle that through contracting for larger amounts of goods and services lower unit costs will be realized. The nature of this philosophy encouraged the front-loading of materials acquisition by subvendors, thus further increasing savings through inflation avoidance. In addition, the Federal Acquisition Regulation (FAR) (Reference A) gives other objectives of multiyear contracting. Some of the objectives it states are: 'Reduction of

administrative burden...' (to the Government), 'Stabilization of contractor work forces', 'Broadening the competitive base...' and to 'Provide incentives to contractors to improve productivity...'

III. EVOLUTION OF MULTIYEAR FUNDING AT AVSCOM.

A. The 97th Congress, begun 5 January 1981, set forth criteria relative to proposing DoD multiyear contracts in Public Law 97-86 (Reference B). Public Law 97-86 defined a multiyear contract as 'a contract for the purchase of property or services for more than one, but not more than five, program years. Such a contract may provide that performance under the contract during the second and subsequent years is contingent upon the appropriation of funds and (if it does so provide) may provide for a cancellation payment to be made to the contractor if such appropriations are not made.'

B. The GAO Letter, dated 1 March 1982, to John Tower, Chairman, Committee on Armed Services United States Senate (Reference C) informed him that GAO had examined the documentation for the proposed Black Hawk Multiyear program and had satisfied itself as to its completeness.

C. As per DA TWX 5 April 1982 (Reference D), the four Congressional committees, the SASC, HASC, SAC, and HAC approved the FY82-84 Multiyear contract for the UH-60A Black Hawk airframe for award in FY82.

D. As a result, the UH-60A Black Hawk FY 82-84 Multiyear contract, the Army's first multiyear contract, was signed on 12 April 1982.

IV. DOD BUDGET GUIDANCE MANUAL & ASSOCIATED MULTIYEAR EXHIBITS. The DoD Budget Guidance Manual (Reference E), dated July 1985, and revised July 1987, contains the instructions necessary to submit documentation to Congress in requesting multiyear approval. At the heart of these

instructions lie the precise formats the documentation submitted to Congress must display. These formats have been incorporated into the formal documents officially referred to as Multiyear Exhibits. The DoD Budget Guidance Manual contains 8 exhibits. Some of the exhibits require qualitative input, whereas some require direct quantitative input. Thus, the Multiyear Funding Model will only satisfy a portion of the exhibit requirements (Exhibits MYP-3, MYP-4, MYP-5, and MYP-8):

A. EXHIBIT MYP-3 (Total Program Funding Plan). This exhibit identifies total program budget figures for both the annual and multiyear programs, as well as the savings derived from choosing the multiyear alternative. A sample format for this exhibit can be found in the Appendix. See subsection C2 of section V. for a description of the output element of the model which satisfies DoD Budget Guidance requirement for this exhibit.

B. EXHIBIT MYP-4 (Contract Funding Plan). This exhibit identifies contract cost figures for both the annual and multiyear scenarios, as well as the savings derived from choosing the multiyear alternative. A sample format for this exhibit can be found in the Appendix. See subsection C3 of section V. for a description of the output element of the model which satisfies DoD Budget Guidance requirement for this exhibit.

C. EXHIBIT MYP-5 (Impact of Inflation on Funding). This exhibit identifies the change in total program and contract plans as a result of a change in either direction of 1% per year or 2% per year in the approved inflation rate. The budgeted program funding for annual and multiyear plans should agree with the data presented on Exhibit MYP-3, and the budgeted contract funding for these plans should agree with Exhibit

MYP-4. A sample format for this exhibit can be found in the Appendix. See subsection C6 of section V. for a description of the output element of the model which satisfies the DoD Budget Guidance requirement for this exhibit.

D. EXHIBIT MYP-8 (Present Value Analysis). This exhibit identifies the difference between the Annual Contract values and the Multiyear Contract values from three different perspectives; Then Year Dollars, Constant Dollars, and Present Value. A sample format for this exhibit can be found in the Appendix. See subsection C5 of section V. for a description of the output element of the model which satisfies DoD Budget Guidance requirement for this exhibit.

V. OVERVIEW OF LOTUS MULTIYEAR MODEL METHODOLOGY.

A. OVERVIEW OF BASIC METHODOLOGY. An understanding of the interrelationships between the annual and multiyear plans, both contract and program, is essential to understanding the model's methodology. Since the goal of the Multiyear model is to compare the impact on the total program of an annual versus multiyear procurement for a specific subsystem, the model 'freezes' other variables not being examined. 'Other variables' are all other items in the program funding plan, including other subsystems that may be under contract but which are considered non-contractual for the purposes of the model. Therefore, a fundamental assumption of the Multiyear model is that for the subsystem under examination, the non-contract portion of the program is a constant which remains the same under both the multiyear and annual contract alternatives. Thus, in equation form:

Equation 1:

(Non-Contract portion of Annual Program) = (Non-Contract portion of Multiyear Program)

In addition, it is known that the Annual and Multiyear Programs are broken down into contractual and non-contractual components:

Equation 2:

(Annual Contract) + (Non-Contract portion of Annual Program) = (Annual Program)

Equation 3:

(Multiyear Contract) + (Non-Contract portion of Multiyear Program) = (Multiyear Program)

Rearranging equation 3:

Equation 4:

[(Multiyear Program) - (Multiyear Contract)] = (Non-Contract portion of Multiyear Program)

Substituting from equation 1 into equation 4:

Equation 5:

[(Multiyear Program) - (Multiyear Contract)] = (Non-Contract portion of Annual Program)

And lastly, combining equations 5 and 2 by substituting the left-hand side of equation 5 for the Non-Contract portion of the Annual Program to solve for the Annual Program:

Equation 6 (The solution):

(Annual Contract) + [(Multiyear Program) - (Multiyear Contract)] = (Annual Program)

Only the Multiyear Contract itself is truly entirely multiyear. However, since the contract is incorporated into the Program, the Program becomes multiyear as well. The preceding (equation 6) is used in the input section of the Multiyear Model to calculate an unknown (in this case the Annual Program) given the three other values.

B. METHODOLOGY & CALCULATIONS FOR INPUT MATRICES.

1. There are six input sections in the Lotus Multiyear Funding Model: The Annual Contract Plan, The Multiyear Contract Plan, The Annual Program Plan, The Multiyear Program Plan, The Inflation and Outlay Rates Input Section, and the Present Value Factors Input Section. These six input sections are contained in the three input ranges located in the upper left-hand corner of the spreadsheet (see spreadsheet 'road map' in the appendix of this Technical Memorandum). Five of the six input sections are unprotected ranges (show up as green on a color monitor) that allow the user to input data. Note that the Annual Program Plan section is not true input but is actually output (shows up as a white protected range) calculated by the model and used as input data for the output sections. Although located physically within the other input sections, the Annual Program matrix is placed there for logical consistency only. It is actually 'intermediate output' and is a protected range (will not accept input unless 'unlocked' by the user first).

2. The establishment of a multiyear requirement is an iterative process. The initial iteration consists of PMO generated multiyear and annual estimates developed at the time of the initial submission of the budget for the fiscal year in which the multiyear contract is planned. The second iteration consists of more accurate contractual input based on the results of contract negotiations generated as reported by the government contract negotiating team. A brief description of each of the six input sections is as follows:

a. Annual Contract Plan. In the immediate upper left-hand corner of the spreadsheet is the Annual Contract Plan input range. Data used to fill this range are handled the same whether or not the iteration under examination is the first or second. For the budget year and each of the following Program Objective Memorandum (POM) years, this section contains the end item requirement in quantity and dollars, the advance funding (if any) applied to the end item in future years, and the spares quantity and dollars for that fiscal year. The Annual Contract Plan represents a commitment by the Army to only procure the subsystem being examined on an annual basis.

b. Multiyear Contract Plan. Directly below the Annual Contract input range is the Multiyear Contract Plan input range. Data used to fill this range are handled the same whether or not the iteration under examination is the first or second. As with the Annual Contract Plan input range, the end item quantity and dollars, the advance funding (if any) applied to the end item in future years, and the spares quantity and dollars for that fiscal year are contained in this section for the budget and POM years. The Multiyear Contract Plan represents a commitment by the Army to procure the subsystem being examined for a period of time exceeding one year, but not more than five.

c. Annual Program Plan. Directly below the Multiyear Contract Plan input range is the input range for the Annual Program Plan. In the case of a Program Management Office currently having a program plan incorporating a Multiyear Contract for the subsystem being examined, data within this 'input' range will be calculated by the Lotus Multiyear Funding Model given that the inputs for the other three sections (Annual Contract, Multiyear Contract, and Multiyear Program) have been entered correctly. The model uses the methodology introduced in equation six of the previous subsection of this Technical Memorandum to calculate the Annual Program Plan. The assumption in the annual plan is that within the overall program each

subsystem, including the contract (subsystem under analysis), is procured only under an annual strategy.

d. Multiyear Program Plan. The Multiyear Program Plan is located directly below the Annual Program Plan. For a Program Management Office currently under a multiyear contract for the subsystem under analysis, data needed to fill this matrix should be readily available in-house. The multiyear program plan is comprised of the PMO's total program funding requirement which must contain funding requirements for a multiyear contract for the subsystem under analysis.

e. Inflation and Outlay Rates Input Section. The inflation and outlay rates are input for each year directly from the latest OSD inflation guidance. Inflation is input for both compound and composite indices for the base year to the ninth year after the base year. A set of outlay rates are input for the first (base) year of obligation, the second year of obligation, and the third and subsequent years of obligation. Each set of rates is time-phased from the year of obligation through the sixth year after obligation.

f. Present Value Factors Input Section. This section will contain the OSD approved present value factors from DODI 7041.3. As of the date of this writing, these factors were calculated using a 10% mid-year rate as follows:

$$F_n = \frac{1}{[(1+r)^{n-1} + (1+r)^{n}] / 2}$$

where: n = the year of the factor
r = the annual percentage rate (in decimal form)
F_n = the factor for a given year

The 10% mid-year factors, when calculated, are as follows:

1st year	2nd year	3rd year	4th year	5th year
.954	.868	.788	.717	.652

7th year	8th year	8th year	9th year	10th year
.592	.538	.489	.445	.405

C. METHODOLOGY & CALCULATIONS FOR OUTPUT MATRICES.

1. Overview of Output Ranges. The Lotus Multiyear Model produces nine output ranges. Six of these, in whole or in part, correspond to four exhibits required by the OSD Budget Guidance Manual. Four of the output ranges each constitute part of two of the OSD multiyear exhibits (MYP-3 and MYP-4), while the other two each correspond in entirety to OSD multiyear exhibits (MYP-5 and MYP-8). The remaining three outputs of the Lotus Multiyear Model (Budget Requests, the Contract Outlay Matrix, and the Program Outlay Matrix) are for the convenience and use of the Program Management Office. A summary of the output ranges of the Lotus Multiyear Model in tabular form:

OSD Budget Guidance Manual Exhibit Number	Lotus Multiyear Funding Model Range Name (see the Range Name Dictionary and 'Roadmap' in the appendix of this Memorandum)
MYP-3	PFPBR and POLP
MYP-4	CFPBR and COLP
MYP-5	INFLAT
MYP-8	PVA
N/A (Budget Requests)	BRS
N/A (Contract Outlay Matrix)	No Range Name
N/A (Program Outlay Matrix)	No Range Name

2. Program Funding Plan.

a. Current Annual Estimate.

(1) In the Program Funding Plan output section (the top part of MYP-3), the End Item dollar amount for the Current Annual Estimate is taken directly from the Input Section. Note that this is a part of the Input Section that is not true input, but is actually computed by the model as discussed in the section of this Technical Memorandum which covers the input sections. Advance Funding in the first year is derived within the model by taking a summation of the Advance Funding obligated in the (Input Section) years prior to the current end item procurement.

(2) Advance Funding in subsequent years is the summation of all funds obligated for the target end item procurement as advance funding in the appropriate prior years. Directly below 'Less Advance Funding' is the Net Request. It is derived by taking the End Item dollars less Advance Funding, and remains the same throughout the matrix. Advanced Funding is a summation of all the Advanced Funding obligated in that year and targeted for the procurement of end items in future years, and also remains the same throughout the matrix. Near the bottom of the Current Annual Estimate matrix lies the Total Weapon System cost. It represents the sum of the Net Request and Advanced Funding. Spares cost (below the Total Weapon System) is throughput directly from the model's Input Section throughout the Current Annual Estimate matrix. Lastly, on the bottom line of the matrix lies the Total Budget Request, which represents a summation of Total Weapon System and Spares costs for each year of the matrix.

b. Multiyear Proposal. The Multiyear proposal (located below the Current Annual Estimate) is almost identical in composition to the Current Annual Estimate except that each cell refers to the appropriate

value where the assumption is that the contract under analysis included in the multiyear proposal will be multiyear. Also, direct throughputs are taken from the multiyear program input section. An addition to the Current Annual Estimate is the Proposed Savings for each year at the bottom of the Multiyear Proposal matrix. Proposed Savings are obtained by the model from subtracting the Total Budget Request of the Multiyear Proposal from the Total Budget Request of the Current Annual Estimate.

c. Outlays: For each year, the Total Budget Request is divided by the appropriate OSD composite inflation index and then multiplied by the appropriate outlay rates to obtain the total disbursements (outlays over a period of time) in constant dollars for a given year's funds. Funds obligated in various years applied to a given year are then summed to give that given year's total outlays in constant dollars, and then are multiplied by the appropriate compound inflation rate to give that given year's total outlays in current (then-year) dollars (see the detailed outlay matrix of the model for a tabular representation of this explanation). Outlays are computed for the Annual Estimate and the Multiyear Proposal, and then the Multiyear Proposal is subtracted from the Annual Estimate to obtain the difference in outlays.

3. Contract Funding Plan.

a. Current Annual Estimate. This matrix is almost identical to the Current Annual Estimate in the Program Funding Plan. An exception, of course, is that the cell values for this matrix are derived from the Annual Plan input section for the contract. Also, end item quantities are direct throughput from the input section.

b. Multiyear Proposal. This matrix is almost identical to the Current Annual Estimate in the Contract Funding Plan except that each cell

refers to the appropriate value where the assumption is that the contract under analysis included in the multiyear proposal will be multiyear.

c. Outlays. The outlays in the Contract Funding Plan are calculated in the same way as those in the Program Funding Plan.

4. Budget Requests. The Budget Request section contains figures that are based upon the output generated in the applicable Total Budget Request lines of both the Program and Contract Funding Plans. The 'Then-Year' portions of this section are throughput directly from the corresponding sections identified above. The 'Constant $' portions of this section are calculated by dividing the corresponding figures from the 'Then-Year' portions of this section by the appropriate composite inflation index (input previously) in the OSD Inflation Guidance section.

5. Present Value Analysis. The Annual and Multiyear Proposal portions of this section contain 'Then-Year' and 'Constant $' entries which are time-phased over a ten year period and have their origin in the Budget Request portion of the output section. The 'Constant $' are calculated by taking the 'Constant $' figures from the Budget Request section and multiplying them by the applicable outlay rates from the OSD Inflation Guidance section, and subsequently summing the disbursements from the various years of obligation within the applicable year of disbursement. The 'Then-Year $' entries follow the same methodology of the 'Constant $' entries, except that the 'Then-Year $' entries (*) have been multiplied by the applicable compound indices after being summed in the actual year of disbursement. The 'Present Value' entries for both the Annual and Multiyear portions are calculated by taking the figures in the

(*) From Budget Request section

'Constant $' and multiplying them by the appropriate 'Present Value' factors which were discussed previously. Lastly, the 'Difference' portion of the Present Value Analysis Exhibit is calculated by subtracting the figures in the Multiyear Proposal from the corresponding figures in the Annual Proposal. Actual savings gained through the use of a multiyear procurement strategy are represented by the Then Year Total in the 'Difference' portion of the exhibit. These savings may be broken into real savings and savings attributable to inflation avoidance. Real savings are represented by the Constant Dollars Total in the 'Difference' portion of the exhibit. Savings attributable to inflation avoidance may be calculated by subtracting the Constant Dollar Total from the Then Year Dollar Total within the 'Difference' portion of the Present Value Analysis Exhibit.

6. Impact of Inflation on Funding. This section is calculated by taking the time-phased figures displayed in the 'Then-Year' portion of the Budget Request section and spreading them throughout the appropriate lines labeled as 'Budget' within the corresponding portions of this section. Each 'Budget' entry serves as a baseline. These baselines are then adjusted incrementally up and down (+ or -) by 1% and 2% in order to reflect the changes to the budget that can be expected if inflation increases or decreases up to 2%.

VI. REFERENCES.

A. The Federal Acquisition Regulation (FAR) dated April 1984, 17.102-3 (a).

B. Public Law 97-86, section 909 (10 USC 2301, as amended).

C. Letter from GAO to John Tower, Chairman, Committee on Armed Services United States Senate, subject: GAO analysis of the Army's compliance with criteria set forth in reference B relative to proposing a multiyear contract for the Black Hawk Helicopter program.

D. DA TWX 5 April 1982, subject: FY82 Multiyear Funding Authorization for Black Hawk.

E. DoD Budget Guidance Manual dated July 1985, revised July 1987.

VII. BIBLIOGRAPHY.

A. DA TWX 5 April 1982, subject: FY82 Multiyear Funding Authorization for Black Hawk.

B. DoD Budget Guidance Manual dated July 1985, revised July 1987.

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E. Public Law 97-86, section 909 (10 USC 2301, as amended).

APPENDIX A

USER GUIDE FOR LOTUS MULTIYEAR FUNDING MODEL

1. This model was developed using Lotus software and produces several Exhibits comparing multiyear procurement funding plans to single-year funding plans. This version covers six fiscal years (budget year plus five POM years).

2. The model user must provide the following data:

a. Compound and composite inflation indices for ten years.

b. Aircraft procurement outlay rates for all six fiscal years.

c. Present value discount factors for ten years.

d. Yearly end item quantity and end item dollars, yearly spares quantity and spares dollars, and yearly advance funding requirements for the annual plan of the contract in question.

e. Yearly end item quantity and end item dollars, yearly spares quantity and spares dollars, and yearly advance funding requirements for the multiyear plan of the contract in question.

f. Yearly end item quantity and end item dollars, yearly spares quantity and spares dollars, and yearly advance funding requirements for the multiyear total program (the single-year procurement plan for the overall program will be calculated automatically).

3. This model is a menu driven program. The menu selections have been tailored especially for this program and are not the standard Lotus menu

selections. Press the 'Alt' key and the 'M' key simultaneously in order to access the Main Menu. The six menu choices are:

a. Add Contract Data

b. Change Titles

c. Update Inflation

d. Xtract

e. Print

f. Save

g. Quit

4. Add Contract Data.

a. This menu choice simply positions the cursor on cell B7, which is the upper left hand corner of the region containing the contract data. The cells which the user is required to fill are unprotected and indicated in green. All other cells are protected (indicated in white) so that they cannot be changed accidentally.

b. Regions that require user input are the following:

(1) B7..H18 (annual plan for the specific contract)

(2) B22..H33 (multiyear plan for the specific contract)

(3) B56..H67 (multiyear plan for the total program)

c. Region B39..H50 contains the single-year plan for the total program and is calculated automatically from the other user-supplied data. It is a protected region and should not be changed by the user.

5. Change Titles. This menu choice positions the cursor on cells containing the name of the overall program and waits for the user to enter a new name. The cursor then moves to the cell containing the name of the particular contract in question and again waits for the user to enter a new title. The program then automatically copies these two new titles to all appropriate display regions and returns the user to the model's Main Menu.

6. Update Inflation. This menu choice positions the cursor on cell B78, which is the upper left corner of the region containing the inflation indices. Regions which the user can change are unprotected cells indicated in green; all other cells are protected (indicated in white) to prevent the user from accidentally changing them. The regions which the user might need to change are the following:

a. D72..D72 (date of inflation).

b. B78..K79 (compound and composite inflation indices).

c. B86..K88 (outlay rates).

d. B96..K96 (present value discount factors).

7. Xtract.

a. This menu choice prepares the worksheet for insertion of plus signs in those cells that reflect a positive difference between annual and multiyear funding plans.

b. The entire worksheet is extracted onto a dummy file containing

cell values, not cell formulas. This option then calls the new dummy file to the screen for subsequent insertion of plus signs which is accomplished by the Print menu choice.

NOTE: When all data changes have been made, it is essential to obey the following sequence of commands to print a file: Save, Xtract, Print and Quit. To save a file after printing will save only the worksheet values, not the worksheet formulas. Also, the Print option must follow Xtract because Print not only prints the desired output but it also erases the dummy file created by Xtract. If Xtract has not been invoked and the dummy file not yet created, the Print macro will produce erroneous output.

8. Print.

a. This menu choice automatically prints the following exhibits comparing single-year and multiyear plans:

(1) Program funding plan including outlay.

(2) Contract funding plan including outlay.

(3) Contract and program budget requests (then-year and budget-year dollars).

(4) Present value analysis.

(5) Impact of inflation on funding.

b. To print the output, it is necessary to use paper wide enough to hold lines of 132 characters (14.5" x 11"). When the printout is complete, the program will automatically return the user to the Main Menu.

9. Save. This menu choice simply saves the current worksheet with all changes to disk and returns the user to the Main Menu.

NOTE: In order to save the file using this Main Menu, there can be no file already on disk with the same name as the file to be saved. In order to write over an existing file, Lotus will ask the question Replace?, and the Main Menu macro does not contain a response to that question. An error will result, and the file will not be saved.

10. Quit. This menu choice leaves the worksheet and exits completely from Lotus, returning the user to the DOS mode.

11. Restoring the Main Menu. The Change Titles, Print, and Save menu selections automatically return the user to the Main Menu once their functions are complete. However, the Add Contract Data and Update Inflation options do not. Those two options of necessity leave the user in the normal Lotus ready mode so that the user can make the desired data changes. If the user has completed all necessary data changes and wishes to return to the Main Menu, depress the 'Alt' and 'M' keys simultaneously.

12. Making Changes to the Model. It might become necessary to change the structure of this model (i.e., changing formulae in a protected cell, adding rows and/or columns to cover more than six years, changing the format of a particular display, etc.). To make such changes, it is necessary to be in the normal Lotus ready mode. However, as soon as the model worksheet is accessed, the Main Menu automatically appears instead of the Lotus menu because of a \0 macro. As stated above, the Change Titles, Print, and Save options restore the user to the Main Menu, and the Quit option exits Lotus altogether. The 'Esc' key, Add Contract Data and Update Inflation Data options are the only ways to escape from the Main Menu into the Lotus ready mode. Once this is accomplished, changes can then be accomplished in the same way as any other Lotus worksheet.

13. The model worksheet, except for the contract funding plan display, falls within the region A1..L358. The contract funding display can be found in region M1..AN37. Macros are located in region M81..X190.

APPENDIX B

TOTAL PROGRAM FUNDING PLAN
(EXHIBIT MYP-3)
Program: _____

	FY	FY	FY	FY	FY	TOTAL
Quantity						
Annual Program						
End Item						
Less Advance Funding						
Net Request						
Advanced Funding						
Total Annual Cost						
Multiyear Program						
End Item						
Less Advance Funding						
Net Request						
Advanced Funding						
(For FY)						
(For FY)						
(For FY)						
(For FY)						
Total						
Total Multiyear Cost						

Outlays	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY
TOTAL										
Annual										
Multiyear										
Savings										

CONTRACT FUNDING PLAN
(EXHIBIT MYP-4)
Program_____

	FY	FY	FY	FY	FY	TOTAL
Quantity						
Annual Program						
End Item						
Less Advance Funding						
Net Request						
Total Annual Cost						
Multiyear Program						
End Item						
Less Advance Funding						
Net Request						
Advanced Funding						
(For FY)						
(For FY)						
(For FY)						
(For FY)						
Total						
Total Multiyear Cost						

Outlays	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	TOTAL
Annual											
Multiyear											
Savings											

IMPACT OF INFLATION ON FUNDING
(EXHIBIT MYP-5)

	TOA ($ in Millions)					
	FY	FY	FY	FY	FY	TOTAL
MULTIYEAR PLAN						
Contract						
+2%						
+1%						
Budget						
-1%						
-2%						
Total Program						
+2%						
+1%						
Budget						
-1%						
-2%						
ANNUAL PLAN						
Contract						
+2%						
+1%						
Budget						
-1%						
-2%						
Total Program						
+2%						
+1%						
Budget						
-1%						
-2%						

PRESENT VALUE ANALYSIS
(EXHIBIT MYP-8)
Program_____

	Outlays						
	FY	FY	FY	FY	FY	FY	TOTAL
Annual Proposal							
Then Year Dollars							
Constant Dollars							
Present Value							
Multiyear Proposal							
Then Year Dollars							
Constant Dollars							
Present Value							
Difference							
Then Year Dollars							
Constant Dollars							
Present Value							

APPENDIX C

Multiyear Funding Model
RANGE NAME DICTIONARY

Output Ranges:

Range Name	Cell Address	Description
BRS	A137..H169	Contract and Program Budget Requests
CFPBR	M1..AN37	Contract Funding Plan Output
CFPOUT	A211..L223	CFP Annual/Multiyear Difference Output
COLP	A218..L223	Lower part of above output range
INFLAT	A315..H358	Impact of Inflation Output
INPUT1	A1..H33	Contract Plan Input
INPUT2	A35..K67	Annual and Multiyear Program Plan Input
INPUT3	A70..K96	Inflation and Present Value Input Section
PFPBR	A98..H134	Program Funding Plan Output
PFPOUT	A296..L308	PFP Annual/Multiyear Difference Output
POLP	A303..L308	Lower part of above output range
PVA	A228..L255	Present Value Analysis Output

Multiyear Funding Model
RANGE NAME DICTIONARY
(continued)

Title Ranges:

Range Name	Cell Address	Description
CBFYNAM	U3	Contract Name for Contract Funding Plan
CBRCNA	C155	Contract Name for Budget Requests
CBRNA	C137	Contract Name for Budget Requests
CFPNAM	F215	Contract Name for CFP Annual/Multiyear Difference Display
CONAME	D2	Contract for Funding Plan Input Section
INFNAM	C317	Contract Name for Impact of Inflation Output
PRBCNA	H155	Program Name for Budget Requests
PBRNA	H137	Program Name for Budget Requests
PFFYNAM	D100	Program Name for Program Funding Plan
PFPNAME	F300	Program Name for PFP Annual/Multiyear Difference Display
PRONAME	D1	Program Name for Funding Plan Input Section
PVANAM	F232	Contract Name for Present Value Analysis

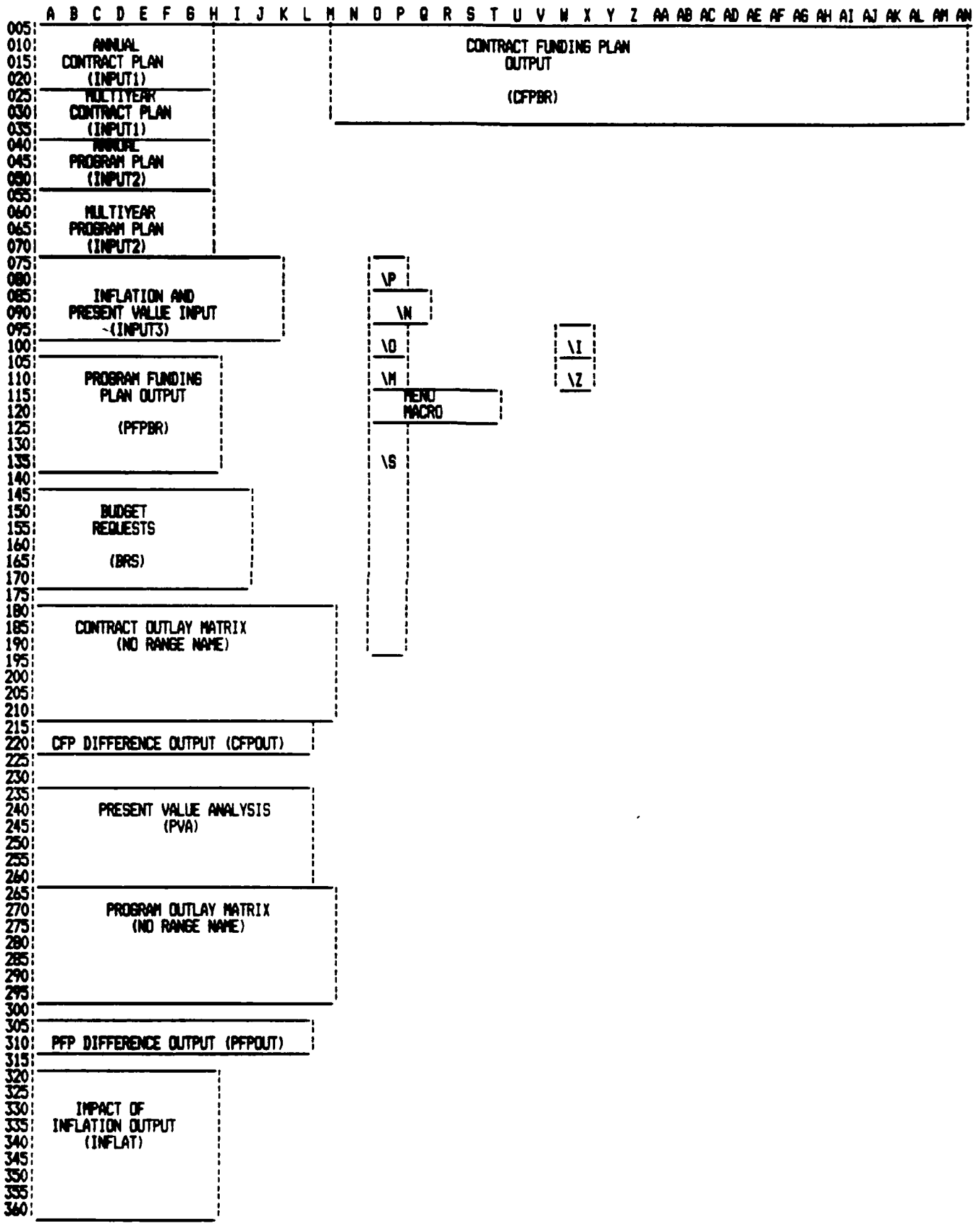
Multiyear Funding Model
RANGE NAME DICTIONARY
(continued)

Macro Ranges:

Range Name	Cell Address	Description
\I	Y95	Input Section Print Macro
\M	0109	Menu Start Macro
MENU1	0111..T118	Menu Macro
\N	081..Q91	Program and Contract Name Copy Macro
\O	0106..P107	Automatic Menu Macro
\P	094..P104	Output Print Macro
\S	N121..0192	Macro that Inserts Plus Signs
\Z	N120..0121	Contract Funding Plan and Annual/Multiyear Difference Output Macro

"ROADMAP" FOR
MULTIYEAR FUNDING MODEL

Not to scale. Range names in parentheses.



APPENDIX D

GLOSSARY OF ACRONYMS

NAME	DESCRIPTION
AAO	AUTHORIZED ACQUISITION OBJECTIVE
AMP	ARMY MATERIEL PLAN
BCE	BASELINE COST ESTIMATE
COB	COMMAND OPERATING BUDGET
DAPs	DESIGNATED ACQUISITION PROGRAMS
EEROC	EXPEDITED ESSENTIAL REQUIRED OPERATIONAL CAPABILITY
EOQ	ECONOMIC ORDER QUANTITY
FYDP	FIVE YEAR DEFENSE PLAN
GAO	GOVERNMENT ACCOUNTING OFFICE
GFE	GOVERNMENT FURNISHED EQUIPMENT
HAC	HOUSE APPROPRIATIONS COMMITTEE
HASC	HOUSE ARMED SERVICES COMMITTEE
ICE	INDEPENDENT COST ESTIMATE
LOA	LETTER OF AGREEMENT
LRRDAP	LONG RANGE RESEARCH AND DEVELOPMENT ACQUISITION PLAN
MADP	MATERIEL ACQUISITION DECISION PROCESS
MAMP	MATERIEL ACQUISITION MANAGEMENT PLAN
MARB	MATERIEL ACQUISITION REVIEW BOARD
MDEP	MANAGEMENT DECISION PACKAGE
MP/FP	MULTIYEAR PRODUCTION/FUNDING PROFILE
MRIS	MODERNIZATION READINESS INFORMATION SYSTEM (OR SUBMISSION)

GLOSSARY OF ACRONYMS

NAME	DESCRIPTION
MYP	MULTIYEAR PROCUREMENT
OSD	OFFICE OF THE SECRETARY OF DEFENSE
PBD	PROGRAM BUDGET DECISION
PDIP	PROGRAM DECISION (OR DEVELOPMENT) INCREMENT PACKAGE
PDM	PROGRAM DECISION MEMORANDUM
PEO	PROGRAM EXECUTIVE OFFICER
PMCS	PROGRAM MANGEMENT CONTROL SYSTEM
PMO	PROGRAM MANAGEMENT OFFICE
POM	PROGRAM OBJECTIVE MEMORANDUM
PPBES	PLANNING PROGRAMMING AND BUDGETING EXECUTION SYSTEM
RFP	REQUEST FOR PROPOSAL
ROC	REQUIRED OPERATIONAL CAPABILITY
SAC	SENATE APPROPRIATIONS COMMITTEE
SAR	SELECTED ACQUISITION REPORT
SASC	SENATE ARMED SERVICES COMMITTEE
SLAPR	SENIOR LEVEL ACQUISITION PLAN REVIEW
SLRB	SENIOR LEVEL REVIEW BOARD
SOW	STATEMENT OF WORK
TOA	TOTAL OBLIGATION AUTHORITY
WBS	WORK BREAKDOWN STRUCTURE

END
DATED
FILM
8-88
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